WHAT IS CLAIMED IS:

1. Visual system comprising a CCD or CMOS matrix having a sensitive area divided into sub-areas, each being designed for a specific function of scene monitoring or detection of environmental parameters, said division being achieved thanks to optical systems (imaging and non-imaging systems) with different directions and/or fields of view and/or modes of optical separation of said sub-areas.

2. System according to claim 1, wherein it is installed in a motor vehicle, for instance on the front portion (i.e. in driving direction) of the inner rear-view mirror of the motor vehicle, so as to perform one or more functions among: rain detection, windscreen misting detection, fog detection, dusk detection, tunnel detection, vehicle meeting detection, monitoring of the scene before the vehicle (for instance lane warning, adaptive headlight, vehicle meeting).

3. System according to claim 1, wherein the matrix is a linear or logarithmic, monochromatic (or color) VGA CMOS matrix.

4. System according to claim 1, wherein the matrix has its sensitive area divided into specific sub-areas designed for front monitoring function, for instance lane warning, for passive fog detection, for dusk detection, for tunnel detection and for active fog detection.

5. System according to claim 4, wherein the sensitive area of the matrix also has a specific sub-area for rain and misting detection.

6. System according to claim 5, wherein the sensitive area of the matrix further comprises an additional specific sub-area for vehicle meeting detection.

7. System according to claim 6, characterized in that it is provided for a sub-area dedicated to an ac-

tive rain detection, by means of an emitter.

8. System according to claim 7, wherein said area dedicated to rain function is also dedicated to windscreen misting function, always by means of an emitter.

9. System according to claim 8, wherein dusk function is performed by a specific sub-area of CMOS matrix.

10. System according to claim 9, wherein tunnel function is performed by using part of the area dedicated to front monitoring function.

11. System according to claim 10, wherein fog function is performed both with a dedicated sub-area, with an active technique for local fog detection (i.e. by means of an emitter, for instance in form of LED or laser diode), and with passive technique for fog bank detection in another sub-area corresponding to the one dedicated to front monitoring or contained therein.

12. System according to claim 11, wherein vehicle meeting function is performed by using two dedicated sub-areas or a sub-area dedicated to front monitoring, in a color matrix or in a monochromatic matrix by means of optical filter laid with a discretization degree at pixel level, though only in the area or sub-area of the matrix dedicated to front monitoring.

13. System according to claim 1, wherein the matrix sensor has a protection window made of glass or transparent plastic, also acting as support for one or more optical fibers and, if necessary, a prism carrying to selected sub-areas of the matrix an optical signal picked up by the latter.

14. System according to claim 13, wherein said optical fibers have proximal ends fitted into holes made into said protection window.

15. System according to claim 13, wherein it comprises means for optical insulation between the area

dedicated to front monitoring and those dedicated to rain, misting, fog and dusk functions, based on a partial covering of the surface of the matrix protection window, on the side towards the matrix, with a layer of absorbing or reflecting material, for instance by serigraphy or thermal evaporation.

16. System according to claim 13, wherein it comprises means for optical insulation of the area dedicated to rain function from the influence of other functions, said insulation being based on: 1) partial covering of prism faces with a layer of absorbing or reflecting material, 2) hole made into the optical window and covering of hole inner walls.

17. System according to claim 13, wherein the sub-area dedicated to rain function receives the optical signal from an optical system comprising in series a prism with optical insulation, a filter and an objective with optical axis orthogonal to windscreen.

18. System according to claim 13, wherein the sub-area dedicated to windscreen misting function receives the optical signal from an optical system comprising a prism with optical insulation, a filter and an objective with optical axis orthogonal to windscreen.

19. System according to claim 13, wherein the sub-area dedicated to dusk function receives the optical signal through an optical fiber.

20. System according to claim 13, wherein the sub-area dedicated to tunnel function receives the optical signal through an objective dedicated also to front monitoring function.

21. System according to claim 13, wherein the sub-area dedicated to fog function, based on active technique, receives the optical signal through an optical system comprising a ball or grin lens or even no

lens at all together with an end of an optical fiber (output), possibly with another grin or micro-optical lens or even with no lens at all on the other end of the optical fiber (input), together with a high-pass/interferential filter, and a collection lens.

22. System according to claim 13, wherein the sub-area dedicated to fog function, based on passive technique, receives the optical signal through an objective dedicated also to front monitoring function.

23. System according to claim 13, wherein the two sub-areas dedicated to vehicle meeting function receive the optical signal through filters together with an objective.

24. System according to claim 13, wherein in the variant of vehicle meeting function based on the use of a sub-area dedicated to front monitoring in a color matrix or in a monochromatic matrix, the optical signal is collected by means of the same objective dedicated to front monitoring function.

25. System according to claim 13, wherein the sub-area dedicated to front monitoring function receives the optical signal through an objective with optical axis shifted with respect to matrix center.

26. System according to claim 1, wherein some sub-areas are reserved for unused pixels necessary as additional separation between used sub-areas.